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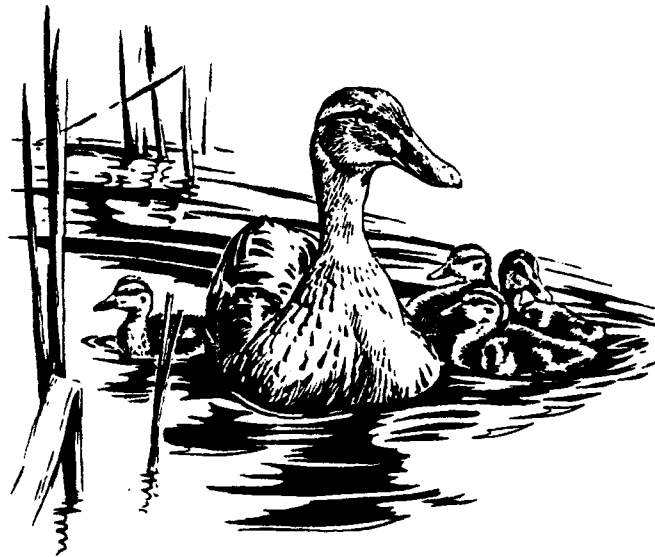
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# ILLINOIS NATURAL HISTORY SURVEY

CENTER FOR WILDLIFE ECOLOGY



**1999-2000 Aerial Waterbird Inventories of Chautauqua National Wildlife  
Refuge and Peoria Lake Environmental Management Program Sites**

**Annual Report**

**by**

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**23 August 2000**



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## Summary

The purpose of this project was to aerially inventory waterfowl (ducks and geese), bald eagles, double-crested cormorants, and white pelicans during fall and spring, 1999-2000, at Upper Peoria Lake and Lake Chautauqua Environmental Management Program (EMP) sites. Inventories were conducted from light aircraft flying at low levels. Fall inventories were made on 1, 7, and 14 September; 4, 19, and 25 October; 3, 8, 15, 22, and 30 November; 6, 14, and 21 December; and 5 January. Spring inventories were made on 7 and 28 February; 6, 13, 23, and 29 March; and 6 April. Species of waterbirds (Table 1) and their respective numbers were recorded during each inventory.

The inventory data are summarized by site in tabular form displaying the peak (highest number counted for all inventories) population count by species for each compartment at each site and for the entire site during fall (September - January) and spring (February - April) (Tables 2 and 9). The peak number for the entire site or groups of species may not represent the sum of the peaks for all the compartments or species because the peak numbers in the various compartments and species could have occurred on different flights. Additionally, the results of each waterfowl inventory are provided by date for each site (Tables 7, 8, 16, and 17). Copies of maps delineating the areas inventoried at each site are also provided (Figures 1 and 2).

### **Upper Peoria Lake**

The Upper Peoria Lake EMP site is divided into two inventory areas, the lake segment and the 168-acre Forested Wetland Management Area (FWMA) (Figure 1). In the lake segment, construction of a barrier island extending roughly one mile and the dredging of the East River side channel were completed in December 1994. A second

island was formed during construction of the barrier island from dredged material unsuitable for use in the barrier island. The second island runs parallel to the barrier island. The fall of 1999 was the fifth waterfowl aerial censusing period (September - January) since the completion of the islands. The peak numbers for several species of waterbirds in the lake segment during fall 1999 were the highest recorded since INHS began monitoring in 1991. These species included blue-winged teals, green-winged teals, American wigeons, gadwalls, northern shovelers, ring-necked ducks, American coots and white pelicans. During the falls of 1995 through 1999 the majority of the dabbling ducks, particularly mallards, and Canada geese were observed on and around the barrier islands. Peak numbers for the lake segment, fall 1991 through 1999 and spring 1992 through 2000, are provided in tables 3 and 4, respectively.

In the beginning of this monitoring project we were unsure if the FWMA could be accurately surveyed from a fixed-wing plane. Waterfowl utilizing forested wetlands are difficult to inventory because they are concealed by vegetation and their numbers are underestimated (Geis 1966, Hawkins and Addy 1966, Conroy et al. 1988, Sherman 1990). The fall of 1999 was the fifth waterfowl aerial censusing period (September - January) of the FWMA since the levees were constructed and the area was inundated. Construction was reported as completed by July 1996. Waterfowl that could positively be identified by species and enumerated were recorded. For the 1996-1997 survey period, we began recording waterfowl that could not be identified by species as "unknowns", thereby acknowledging that there are visibility biases but still treating the observations as an index to the relative abundance of waterfowl. Peak numbers for the FWMA, fall 1991 through 1999 and spring 1992 through 2000, are provided in Tables 5 and 6, respectively.



## **Lake Chautauqua**

The Lake Chautauqua EMP site is divided into two inventory areas, Upper Pool and Lower Pool (Figure 2). High water levels on the Illinois River through late June prevented drawdown of the lower pool until mid-July. Gates in the south pool were opened 13 July and closed 19 July to achieve a water level between 432 and 432.5 feet. This water level was desirable to minimize the possibility of a botulism outbreak. Exposed mud flats were colonized by vegetation providing average waterfowl food production. Preliminary results of a moist-soil evaluation study being conducted by the INHS at Lake Chautauqua revealed teal grass and rice cutgrass as the two most abundant moist-soil plants sampled (Whetsell et al. 1999).

Peak numbers for Upper and Lower Chautauqua, fall 1999 and spring 2000, are provided in Table 9. Peak numbers for Lake Chautauqua, fall 1991 through 1999 and spring 1992 through 2000, are provided in Tables 10 and 13, respectively. Peak numbers for Upper Chautauqua, fall 1991 through 1999 and spring 1992 through 2000, are provided in Tables 11 and 14, respectively. Peak numbers for Lower Chautauqua, fall 1991 through 1999 and spring 1992 through 2000, are provided in Tables 12 and 15, respectively.

Compared with 1998, waterfowl use of Lake Chautauqua was higher for dabbling ducks, lower for diving ducks and slightly higher for total ducks observed during fall 1999. During the dry spring of 2000, waterfowl use of Lake Chautauqua was much higher for all dabbling duck species with the exception of American black ducks compared to spring 1999. Diving duck use of Lake Chautauqua during spring 2000 was comparable to spring 1999.

Table 1. Common names of waterbirds aerially inventoried and abbreviations used in the report.

Common name		Abbreviation
<b>Dabbling ducks</b>		
Mallard	=	MALLARD
American black duck	=	BLK
Northern pintail	=	PNT
Blue-winged teal	=	BWT
Green-winged teal	=	GWT
American wigeon	=	WIG
Gadwall	=	GAD
Northern shoveler	=	SH
<b>Diving ducks</b>		
Lesser and greater scaup	=	SCAUP
Ring-necked duck	=	RN
Canvasback	=	CNVB
Redhead	=	RH
Ruddy duck	=	RDY
Common goldeneye	=	GLD
Bufflehead	=	BH
<b>Mergansers</b>		
Common merganser	=	CM
Red-breasted merganser	=	RBM
Hooded merganser	=	HM
<b>Unknown</b>	=	UNK
<b>Geese</b>		
Canada goose	=	CG
Lesser snow goose	=	SG
<b>American coot</b>	=	COOT
<b>Bald eagles</b>		
Adult	=	AD
Immature	=	IMM
<b>Double-crested cormorant</b>	=	CORM
<b>White pelican</b>	=	PEL

## **UPPER PEORIA LAKE**

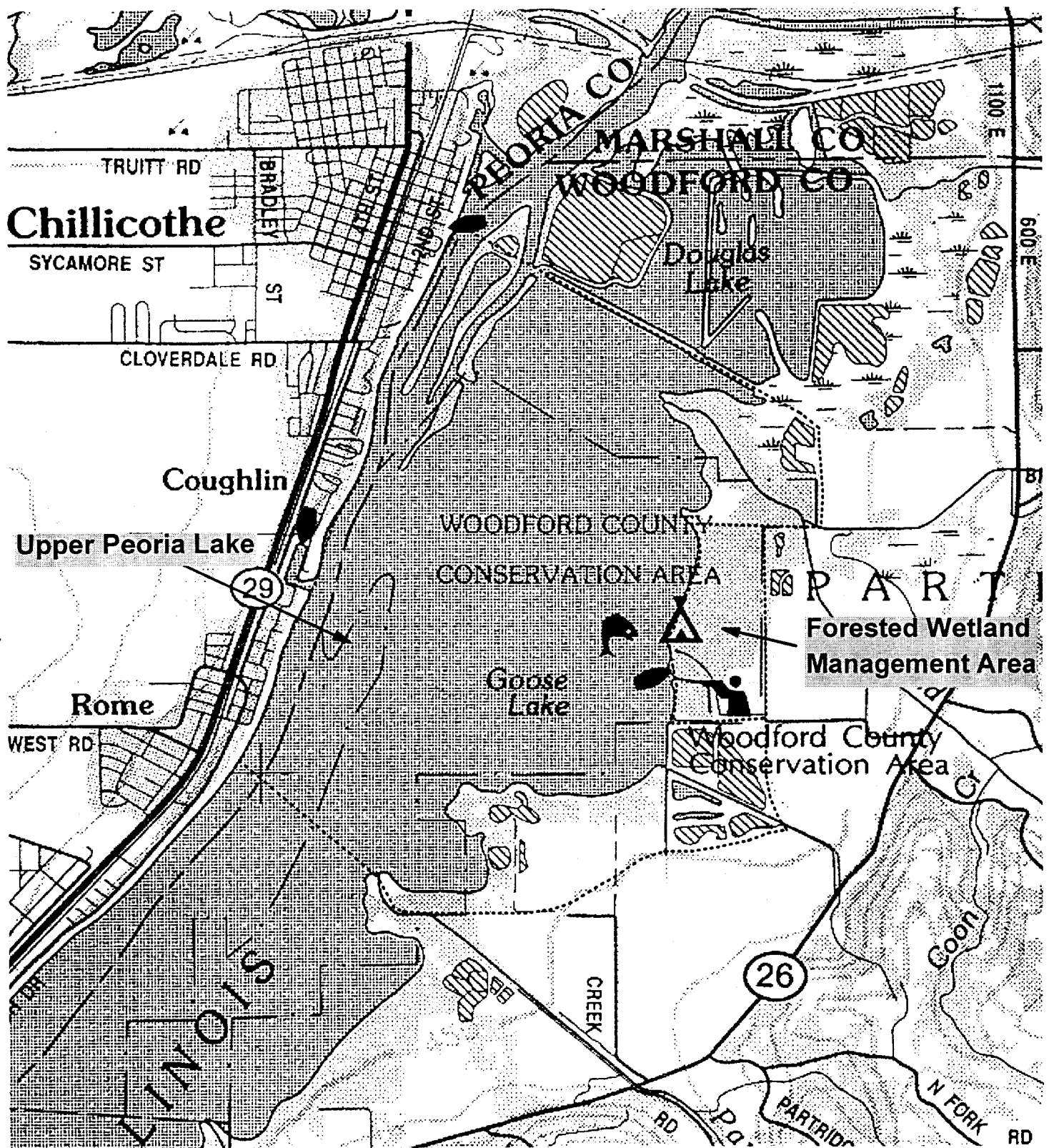


Figure 1. The Upper Peoria Lake EMP site with boundaries drawn delineating the census areas.

Table 2. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Peoria Lake EMP site, fall 1999 and spring 2000<sup>a</sup>.

Species	Upper Peoria Lake		Forested Wetland Management Area		Total EMP Site	
	Fall	Spring	Fall	Spring	Fall	Spring
<b>Dabbling ducks</b>						
Mallard	36,000	750	500	70	36,000	820
American black duck	3,400	100	25	0	3,400	100
Northern pintail	3,000	0	50	0	3,000	0
Blue-winged teal	400	0	0	0	400	0
Green-winged teal	2,300	600	0	0	2,300	600
American wigeon	2,000	0	0	0	2,000	0
Gadwall	3,000	100	0	0	3,000	100
Northern shoveler	1,000	0	0	0	1,000	0
All dabbling ducks	43,000	850	500	70	43,050	920
<b>Diving ducks</b>						
Lesser & greater scaup	800	0	0	0	800	0
Ring-necked duck	3,200	0	0	0	3,200	0
Canvasback	200	0	0	0	200	0
Redhead	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0
Common goldeneye	0	0	0	0	0	0
Bufflehead	0	0	0	0	0	0
All diving ducks	4,000	0	0	0	4,000	0
<b>Mergansers</b>						
Common merganser	1,000	0	0	0	1,000	0
Red-breasted merganser	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0
All mergansers	1,000	0	0	0	1,000	0
<b>Unknown</b>	0	0	200	0	200	0
<b>All ducks</b>	43,500	850	700	70	43,550	920
<b>Geese</b>						
Canada goose	800	400	0	0	800	400
Lesser snow goose	0	0	0	0	0	0
<b>American coot</b>	3,700	0	0	0	3,700	100
<b>Bald eagles</b>						
Adult	8	0	0	0	8	0
Immature	6	0	0	0	6	0
All eagles	14	0	0	0	14	0
<b>Double-crested cormorant</b>	500	0	0	0	500	300
<b>White pelican</b>	200	300	0	0	200	0

<sup>a</sup> The peak number for the entire site or groups of species may not represent the sum of the peaks for all the compartments or species because the peak numbers in the various compartments and species could have occurred on different flights.

Table 3. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Peoria Lake EMP site during fall, 1991-1999.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Dabbling ducks</b>									
Mallard	1,000	3,000	1,000	400	5,000	29,000	63,100	35,100	36,000
American black duck	75	150	50	50	400	3,000	7,000	2,500	3,400
Northern pintail	200	0	50	0	600	700	2,500	5,000	3,000
Blue-winged teal	20	0	0	0	30	200	50	10	400
Green-winged teal	0	0	50	300	50	500	200	1,000	2,300
American wigeon	0	0	0	0	0	100	700	500	2,000
Gadwall	800	0	0	0	1,000	2,500	1,500	2,000	3,000
Northern shoveler	0	0	0	0	0	75	0	500	1,000
All dabbling ducks	1,850	3,150	1,050	700	6,000	35,700	70,800	45,100	43,000
<b>Diving ducks</b>									
Lesser and greater scaup	250	300	0	0	0	1,200	800	2,500	800
Ring-necked duck	0	300	0	100	300	500	1,500	3,000	3,200
Canvasback	0	0	0	0	0	100	100	500	200
Redhead	0	0	0	0	0	0	0	50	0
Ruddy duck	0	0	0	0	0	0	0	0	0
Common goldeneye	50	2,000	3,500	200	100	500	900	0	0
Bufflehead	0	0	0	0	0	4,500	0	0	0
All diving ducks	250	2,000	3,500	200	300	5,500	1,800	5,550	4,000
<b>Mergansers</b>									
Common merganser	0	1,000	1,000	0	700	50	500	0	1,000
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	0
All mergansers	0	0	1,000	0	700	50	500	0	1,000
<b>All ducks</b>	<b>2,050</b>	<b>5,310</b>	<b>4,500</b>	<b>800</b>	<b>6,000</b>	<b>41,200</b>	<b>70,800</b>	<b>50,650</b>	<b>43,500</b>
<b>Geese</b>									
Canada goose	100	0	50	100	2,000	1,500	1,500	800	800
Lesser snow goose	0	0	0	0	50	500	300	0	0
<b>American coot</b>	<b>300</b>	<b>1,000</b>	<b>0</b>	<b>1,000</b>	<b>1,000</b>	<b>2,300</b>	<b>3,000</b>	<b>3,600</b>	<b>3,700</b>
<b>Bald eagles</b>									
Adult	0	1	0	0	8	2	1	1	8
Immature	0	2	0	0	3	0	2	0	6
All eagles	0	3	0	0	11	2	3	1	14
<b>Double-crested cormorant</b>	<b>0</b>	<b>50</b>	<b>25</b>	<b>0</b>	<b>100</b>	<b>800</b>	<b>300</b>	<b>400</b>	<b>500</b>
<b>White Pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>20</b>	<b>25</b>	<b>200</b>

Table 4. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Peoria Lake EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	300	0	100	700	2,100	700	2,550	1,200	750
American black duck	0	0	0	0	50	0	200	0	100
Northern pintail	0	0	0	0	0	0	150	600	0
Blue-winged teal	100	0	0	0	0	0	20	0	0
Green-winged teal	100	0	0	0	0	0	0	50	600
American wigeon	200	0	0	0	0	0	25	0	0
Gadwall	0	0	0	0	0	0	100	0	100
Northern shoveler	0	0	0	0	0	0	0	10	0
All dabbling ducks	300	0	100	700	2,150	700	2,750	1,200	850
<b>Diving ducks</b>									
Lesser and greater scaup	200	100	50	0	0	0	150	600	0
Ring-necked duck	0	0	50	0	0	0	400	0	0
Canvasback	0	0	0	150	0	150	100	3,000	0
Redhead	0	0	0	0	0	0	50	0	0
Ruddy duck	0	0	0	0	0	0	20	0	0
Common goldeneye	400	0	25	50	750	50	0	0	0
Bufflehead	0	0	0	0	0	0	0	0	0
All diving ducks	600	100	50	150	750	150	500	3,000	0
<b>Mergansers</b>									
Common merganser	100	100	400	4,000	1,800	4,000	0	900	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	0
All mergansers	100	100	400	4,000	1,800	4,000	0	900	0
<b>All ducks</b>	<b>1,000</b>	<b>100</b>	<b>500</b>	<b>4,350</b>	<b>2,825</b>	<b>4,350</b>	<b>2,935</b>	<b>3,450</b>	<b>850</b>
<b>Geese</b>									
Canada goose	50	300	0	500	40	500	200	800	400
Lesser snow goose	0	0	0	0	0	0	0	0	0
<b>American coot</b>	<b>200</b>	<b>0</b>	<b>600</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>500</b>	<b>100</b>	<b>0</b>
<b>Bald eagles</b>									
Adult	0	0	0	0	3	23	1	0	0
Immature	0	0	0	0	2	15	2	0	0
All eagles	0	0	0	0	5	38	2	0	0
<b>Double-crested cormorant</b>	<b>0</b>	<b>50</b>	<b>25</b>	<b>0</b>	<b>100</b>	<b>800</b>	<b>0</b>	<b>20</b>	<b>0</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>300</b>

Table 5. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Forested Wetland Management Area (FWMA) EMP site during fall 1991-1999.

Species	1991	1992	1993	1994	1995 <sup>a</sup>	1996 <sup>b</sup>	1997	1998	1999
<b>Dabbling ducks</b>									
Mallard	0	0	0	0	300	300	600	600	500
American black duck	0	0	0	0	50	50	0	50	25
Northern pintail	0	0	0	0	0	25	0	0	50
Blue-winged teal	0	0	0	0	0	0	0	0	0
Green-winged teal	0	0	0	0	0	0	0	0	0
American wigeon	0	0	0	0	0	0	0	0	0
Gadwall	0	0	0	0	0	0	0	0	0
Northern shoveler	0	0	0	0	0	0	0	0	0
All dabbling ducks	0	0	0	0	350	300	600	600	500
<b>Diving ducks</b>									
Lesser and greater scaup	0	0	0	0	0	0	0	0	0
Ring-necked duck	0	0	0	0	0	0	0	0	0
Canvasback	0	0	0	0	0	0	0	0	0
Redhead	0	0	0	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0	0	0	0
Common goldeneye	0	0	0	0	0	0	0	0	0
Bufflehead	0	0	0	0	0	0	0	0	0
All diving ducks	0	0	0	0	0	0	0	0	0
<b>Mergansers</b>									
Common merganser	0	0	0	0	0	0	0	0	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	0
All mergansers	0	0	0	0	0	0	0	0	0
<b>Unknown</b>						100	200	100	200
<b>All ducks</b>	0	0	0	0	350	400	600	700	700
<b>Geese</b>									
Canada goose	0	0	0	0	0	0	0	0	0
Lesser snow goose	0	0	0	0	0	0	0	0	0
<b>American coot</b>	0	0	0	0	0	0	0	0	0
<b>Bald eagles</b>									
Adult	0	0	0	0	0	0	0	0	0
Immature	0	0	0	0	0	0	0	0	0
All eagles	0	0	0	0	0	0	0	0	0
<b>Double-crested cormorant</b>	0	0	0	0	0	0	0	0	0
<b>White pelican</b>	0	0	0	0	0	0	0	0	0

<sup>a</sup> The first fall waterfowl censusing period (September - January) for the FWMA.

<sup>b</sup> The first fall waterfowl censusing period (September - January) that unidentifiable waterfowl in the FWMA were recorded as "unknown".



Table 6. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Forested Wetland Management (FWMA) Area EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996 <sup>a</sup>	1997 <sup>b</sup>	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	0	0	0	0	25	225	300	400	70
American black duck	0	0	0	0	0	0	10	0	0
Northern pintail	0	0	0	0	0	0	0	0	0
Blue-winged teal	0	0	0	0	0	0	20	0	0
Green-winged teal	0	0	0	0	0	0	0	0	0
American wigeon	0	0	0	0	0	0	0	0	0
Gadwall	0	0	0	0	0	0	0	0	0
Northern shoveler	0	0	0	0	0	0	0	0	0
All dabbling ducks	0	0	0	0	25	225	320	400	70
<b>Diving ducks</b>									
Lesser and greater scaup	0	0	0	0	0	0	0	0	0
Ring-necked duck	0	0	0	0	0	0	0	0	0
Canvasback	0	0	0	0	0	0	0	0	0
Redhead	0	0	0	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0	0	0	0
Common goldeneye	0	0	0	0	0	0	0	0	0
Bufflehead	0	0	0	0	0	0	0	0	0
All diving ducks	0	0	0	0	0	0	0	0	0
<b>Mergansers</b>									
Common merganser	0	0	0	0	0	0	0	0	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	0
All mergansers	0	0	0	0	0	0	0	0	0
<b>Unknown</b>						0	0	0	0
<b>All ducks</b>	0	0	0	0	25	225	320	400	70
<b>Geese</b>									
Canada goose	0	0	0	0	0	0	0	0	0
Lesser snow goose	0	0	0	0	0	0	0	0	0
<b>American coot</b>	0	0	0	0	0	0	300	0	0
<b>Bald eagles</b>									
Adult	0	0	0	0	0	0	0	0	0
Immature	0	0	0	0	0	0	0	0	0
All eagles	0	0	0	0	0	0	0	0	0
<b>Double-crested cormorant</b>	0	0	0	0	0	0	0	0	0
<b>White pelican</b>	0	0	0	0	0	0	0	0	0

<sup>a</sup> The first spring waterfowl censusing period (February - April) for the FWMA.

<sup>b</sup> The first spring waterfowl censusing period (February - April) that unidentifiable waterfowl in the FWMA were recorded as "unknown".



Table 8. Waterbird aerial inventory data for each individual flight for the Upper Peoria Lake EMP site, spring 2000.

	MALLARD	BLK	PNT	BWT	GWT	WIG	GAD	SH	SCAUP	RN	CNVB	RH	RDY	GLD	BH	CM	RBM	HM	UNK	DABLERS	TOTAL			BALD EAGLES								
																					TOTAL	TOTAL	TOTAL	DUCKS	CG	SG	COOT	AD	IMM	TOT	CORM	PEL
Upper Peoria Lake																																
02/28/00	550	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	0	0	600	400	0	0	0	0	0	300	
03/06/00	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	15	20	0	0	0	0	0	150	
03/13/00	750	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	850	0	0	850	0	0	0	0	0	0	0	
03/23/00	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	10	0	0	0	0	0	100	
03/29/00	0	0	0	0	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	0	0	600	0	0	0	0	0	0	30	
04/06/00	25	0	0	0	360	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	485	0	0	485	0	0	0	0	0	0	95	
Forested Wetland Management Area																																
02/28/00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
03/06/00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
03/13/00	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0	0	70	0	0	0	0	0	0	0	
03/23/00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
03/29/00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04/06/00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Upper Peoria Lake EMP Area Total																																
02/28/00	550	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	0	0	600	400	0	0	0	0	0	300	
03/06/00	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	15	20	0	0	0	0	0	150	
03/13/00	820	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	920	0	0	920	0	0	0	0	0	0	0	
03/23/00	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	10	0	0	0	0	0	100	
03/29/00	0	0	0	0	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	0	0	600	0	0	0	0	0	0	30	
04/06/00	25	0	0	0	360	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	485	0	0	485	0	0	0	0	0	0	95	

# **LAKE CHAUTAUQUA**

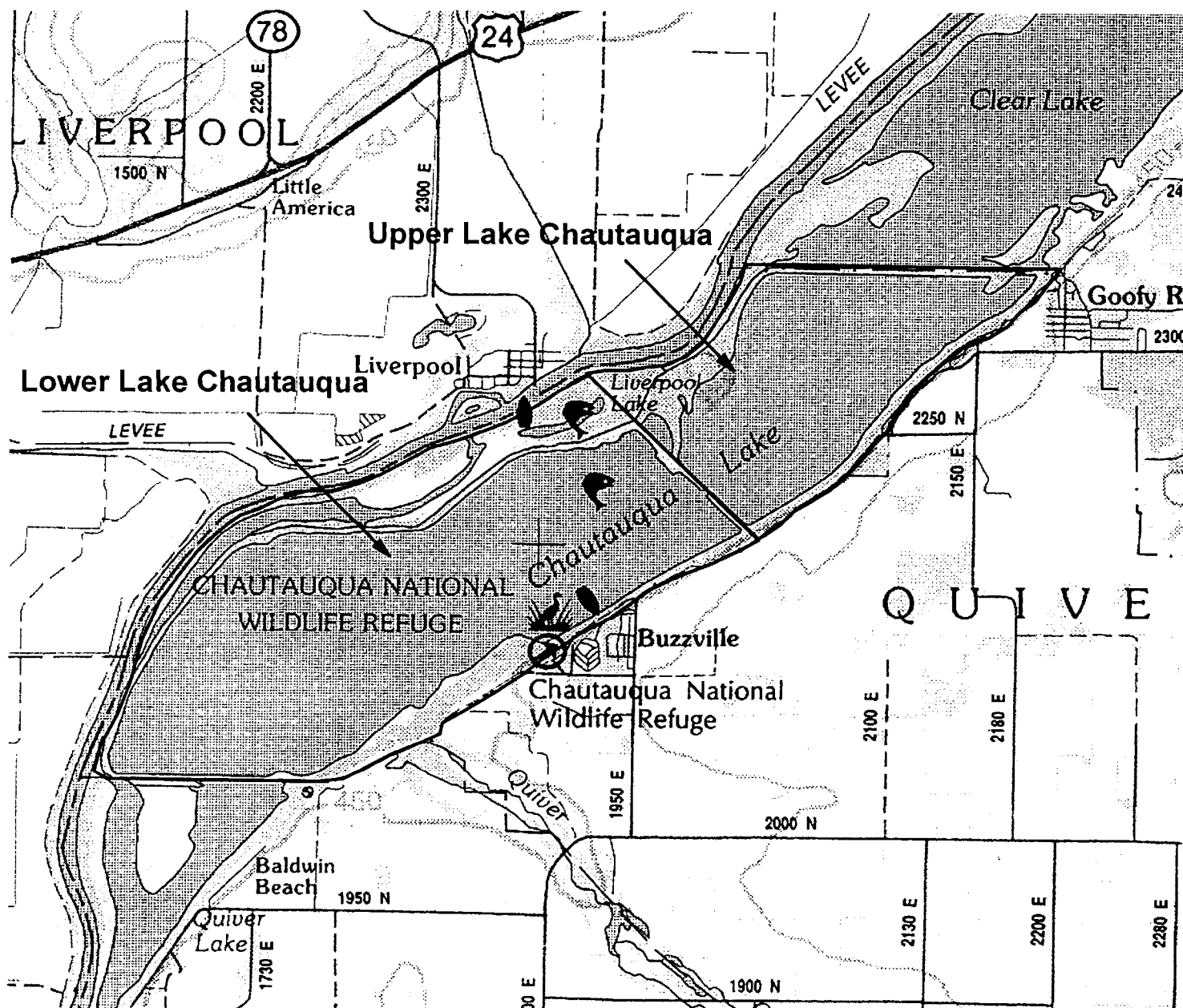


Figure 2. The Lake Chautauqua EMP site with boundaries drawn delineating the census area.

Table 9. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Lake Chautauqua EMP site, fall 1999 and spring 2000<sup>a</sup>.

Species	Upper Chautauqua		Lower Chautauqua		Total EMP Site	
	Fall	Spring	Fall	Spring	Fall	Spring
<b>Dabbling ducks</b>						
Mallard	1,900	200	108,900	49,500	109,320	49,540
American black duck	100	0	3,025	500	3,125	500
Northern pintail	570	0	16,100	6,600	16,100	6,600
Blue-winged teal	6,650	400	6,600	500	6,650	600
Green-winged teal	9,500	200	9,700	8,000	9,700	8,000
American wigeon	0	0	1,500	200	1,500	200
Gadwall	25	0	3,400	660	3,425	660
Northern shoveler	380	3,200	6,180	3,300	6,182	5,600
All dabbling ducks	19,000	3,200	117,345	62,370	117,865	62,410
<b>Diving ducks</b>						
Lesser & greater scaup	500	2,500	500	320	500	2,650
Ring-necked duck	2,000	200	1,400	50	2,050	200
Canvasback	0	200	600	700	600	900
Redhead	0	0	0	0	0	0
Ruddy duck	600	420	1,025	320	900	525
Common goldeneye	0	1,700	0	900	0	2,600
Bufflehead	50	0	255	0	255	0
All diving ducks	2,575	3,225	2,900	1,370	3,100	3,220
<b>Mergansers</b>						
Common merganser	0	600	0	300	0	900
Red-breasted merganser	0	0	0	0	0	0
Hooded merganser	350	25	20	0	350	25
All mergansers	350	620	20	300	350	920
<b>All ducks</b>	<b>19,000</b>	<b>6,100</b>	<b>120,245</b>	<b>62,700</b>	<b>120,855</b>	<b>62,740</b>
<b>Geese</b>						
Canada goose	700	110	9,700	750	9,775	860
Snow goose	0	0	0	400	0	400
<b>American coot</b>	<b>250</b>	<b>3,500</b>	<b>8,700</b>	<b>6,100</b>	<b>8,730</b>	<b>6,600</b>
<b>Bald eagles</b>						
Adult	9	10	4	25	9	35
Immature	10	10	4	24	12	34
All eagles	19	20	7	49	21	69
<b>Double-crested cormorant</b>	<b>5,350</b>	<b>900</b>	<b>5</b>	<b>320</b>	<b>5,350</b>	<b>1,020</b>
<b>White pelican</b>	<b>70</b>	<b>0</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>50</b>

<sup>a</sup> The peak number for the entire site or groups of species may not represent the sum of the peaks for all the compartments or species because the peak numbers in the various compartments and species could have occurred on different flights.

Table 10. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Lake Chautauqua EMP site during fall, 1991-1999.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Dabbling ducks</b>									
Mallard	17,500	58,000	12,430	320,300	165,000	23,000	199,200	78,000	109,320
American black duck	400	1,000	300	2,400	3,000	900	6,200	2,400	3,125
Northern pintail	1,550	4,000	500	20,000	10,500	3,500	20,700	11,350	16,100
Blue-winged teal	320	3,900	0	5,800	9,700	6,100	9,850	4,820	6,650
Green-winged teal	400	7,500	0	11,000	5,000	7,000	18,000	9,200	9,700
American wigeon	3,000	3,500	300	6,000	1,150	1,800	4,500	3,500	1,500
Gadwall	2,800	5,000	1,000	17,000	4,000	2,550	9,160	17,200	3,425
Northern shoveler	0	0	0	15,000	2,100	2,000	2,000	5,310	6,182
All dabbling ducks	21,855	76,840	14,030	368,800	180,600	39,900	225,720	105,660	117,865
<b>Diving ducks</b>									
Lesser and greater scaup	600	300	600	1,000	0	900	1,500	4,850	500
Ring-necked duck	100	2,300	1,200	5,000	400	300	6,200	5,000	2,050
Canvasback	425	125	800	4,000	500	0	3,300	1,600	600
Redhead	25	0	0	0	0	0	1,100	800	0
Ruddy duck	0	0	100	0	0	0	800	2,800	900
Common goldeneye	4,120	4,200	450	0	100	0	25	0	0
Bufflehead	25	50	240	0	0	0	1,300	600	255
All diving ducks	4,120	4,200	2,300	6,500	600	1,200	13,600	13,550	3,100
<b>Mergansers</b>									
Common merganser	200	4,300	250	0	0	0	330	0	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	900	0	400	0	0	50	0	350
All mergansers	200	5,200	250	400	0	0	330	0	350
<b>All ducks</b>	<b>22,335</b>	<b>78,390</b>	<b>16,330</b>	<b>375,600</b>	<b>181,200</b>	<b>41,100</b>	<b>239,320</b>	<b>119,210</b>	<b>120,855</b>
<b>Geese</b>									
Canada goose	155	1,500	400	60,200	23,100	4,000	21,850	4,300	9,775
Lesser snow goose	0	500	0	15,000	300	500	1,600	1,000	0
<b>American coot</b>	<b>4,300</b>	<b>5,100</b>	<b>1,225</b>	<b>50,000</b>	<b>6,900</b>	<b>9,500</b>	<b>19,000</b>	<b>12,800</b>	<b>8,730</b>
<b>Bald eagles</b>									
Adult	43	26	18	13	15	15	6	4	9
Immature	27	18	8	16	25	22	12	5	12
All eagles	70	44	26	29	40	37	17	7	21
<b>Double-crested cormorant</b>	<b>810</b>	<b>1,125</b>	<b>590</b>	<b>200</b>	<b>130</b>	<b>1,700</b>	<b>180</b>	<b>600</b>	<b>5,350</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>475</b>	<b>200</b>	<b>100</b>

Table 11. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Lake Chautauqua EMP site during fall, 1991-1999.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Dabbling ducks</b>									
Mallard	9,000	4,300	700	73,000	2,200	3,000	4,500	12,000	1,900
American black duck	300	120	0	1,500	0	0	500	500	100
Northern pintail	1,050	400	0	9,000	500	200	1,000	1,500	570
Blue-winged teal	270	1,000	0	3,800	3,500	1,100	2,000	1,100	6,650
Green-winged teal	400	5,500	0	6,000	2,000	3,000	5,000	5,000	9,500
American wigeon	500	200	50	5,000	650	100	200	600	0
Gadwall	1,000	0	0	6,000	0	200	300	9,000	25
Northern shoveler	0	0	0	3,000	150	1,000	25	3,000	380
All dabbling ducks	9,180	9,825	700	86,500	5,300	7,000	7,200	20,500	19,000
<b>Diving ducks</b>									
Lesser and greater scaup	100	100	0	0	0	900	0	0	500
Ring-necked duck	0	2,000	100	5,000	0	0	600	0	2000
Canvasback	100	0	0	0	0	0	0	0	0
Redhead	25	0	0	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0	0	600	600
Common goldeneye	625	1,300	50	0	0	0	0	0	0
Bufflehead	25	0	220	0	0	0	200	0	50
All diving ducks	650	2,100	220	5,000	0	900	800	600	2575
<b>Mergansers</b>									
Common merganser	50	500	150	0	0	0	30	0	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	200	0	0	0	0	350
All mergansers	50	500	150		0	0	30	0	350
<b>All ducks</b>	<b>9,180</b>	<b>9,825</b>	<b>800</b>	<b>87,500</b>	<b>5,300</b>	<b>7,900</b>	<b>7,200</b>	<b>20,500</b>	<b>19,000</b>
<b>Geese</b>									
Canada goose	130	300	300	5,000	1,000	1,450	1,150	1,870	700
Lesser snow goose	0	0	0	700	0	200	600	400	0
<b>American coot</b>	<b>1,700</b>	<b>1,000</b>	<b>600</b>	<b>30,000</b>	<b>1,100</b>	<b>6,500</b>	<b>2,300</b>	<b>500</b>	<b>250</b>
<b>Bald eagles</b>									
Adult	9	14	11	3	2	14	2	2	9
Immature	13	11	6	4	2	21	1	5	10
All eagles	22	25	17	7	4	35	3	7	19
<b>Double-crested cormorant</b>	<b>710</b>	<b>105</b>	<b>425</b>	<b>200</b>	<b>130</b>	<b>1,700</b>	<b>180</b>	<b>600</b>	<b>5,350</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>475</b>	<b>200</b>	<b>70</b>



Table 12. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Lower Lake Chautauqua EMP site during fall, 1991-1999.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Dabbling ducks</b>									
Mallard	16,000	56,000	12,400	320,000	164,000	20,000	198,200	64,300	108,900
American black duck	320	1,000	300	2,000	3,000	900	5,700	2,400	3,025
Northern pintail	500	4,000	500	20,000	10,000	3,500	20,600	9,850	16,100
Blue-winged teal	270	3,100	0	3,200	6,200	5,000	9,400	4,020	6,600
Green-winged teal	250	4,800	0	8,000	5,000	4,000	13,000	5,000	9,700
American wigeon	3,000	3,500	300	5,000	700	1,800	4,500	3,500	1,500
Gadwall	2,400	5,000	1,000	11,000	4,000	2,500	9,160	8,200	3,400
Northern shoveler	0	0	0	15,000	2,000	1,800	2,000	3,000	6,180
All dabbling ducks	21,720	74,800	14,000	368,500	178,500	32,900	224,720	85,160	117,345
<b>Diving ducks</b>									
Lesser and greater scaup	600	300	600	1,000	0	0	1,500	4,850	500
Ring-necked duck	100	1,100	1,200	3,000	400	300	5,500	5,000	1,400
Canvasback	425	125	800	4,000	500	0	3,300	1,600	600
Redhead	0	0	0	0	0	0	1,100	800	0
Ruddy duck	0	0	100	0	0	0	800	2,800	1,025
Common goldeneye	3,620	4,000	400	0	100	0	25	0	0
Bufflehead	0	50	20	0	0	0	1,100	600	255
All diving ducks	3,620	4,000	2,300	6,500	600	300	12,800	13,550	2,900
<b>Mergansers</b>									
Common merganser	200	4,300	100	0	0	0	300	0	0
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	900	0	300	0	0	50	0	20
All mergansers	200	5,200	100	300	0	0	300	0	20
<b>All ducks</b>	<b>22,420</b>	<b>75,750</b>	<b>16,300</b>	<b>375,300</b>	<b>179,100</b>	<b>33,200</b>	<b>237,520</b>	<b>98,710</b>	<b>120,245</b>
<b>Geese</b>									
Canada goose	100	1,500	300	60,000	23,000	3,900	21,540	3,500	9,700
Lesser snow goose	0	500	0	15,000	300	500	1,600	1,000	0
<b>American coot</b>	<b>3,500</b>	<b>4,500</b>	<b>1,000</b>	<b>45,000</b>	<b>6,000</b>	<b>3,000</b>	<b>19,000</b>	<b>12,300</b>	<b>8,700</b>
<b>Bald eagles</b>									
Adult	36	12	7	13	15	4	5	2	4
Immature	16	7	2	16	25	2	12	2	4
All eagles	52	19	9	29	40	6	17	4	7
<b>Double-crested cormorant</b>	<b>400</b>	<b>1,050</b>	<b>300</b>	<b>50</b>	<b>0</b>	<b>400</b>	<b>0</b>	<b>50</b>	<b>5</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>100</b>

Table 13. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Lake Chautauqua EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	10,450	700	1,400	12,600	52,000	1,300	2,000	14,650	49,540
American black duck	30	0	0	200	100	0	40	800	500
Northern pintail	20	0	0	3,200	10,000	0	150	1,500	6,600
Blue-winged teal	350	0	0	800	1,700	0	0	0	600
Green-winged teal	125	0	0	5,100	8,800	0	100	200	8,000
American wigeon	300	50	25	3,400	0	0	50	0	200
Gadwall	0	30	0	5,000	250	0	50	100	660
Northern shoveler	300	0	0	6,700	1,000	0	50	1,620	5,600
All dabbling ducks	10,650	750	1,400	25,300	63,900	1,300	2,110	16,040	62,410
<b>Diving ducks</b>									
Lesser and greater scaup	6,800	250	200	600	3,000	1,100	5,500	1,500	2,650
Ring-necked duck	2,000	500	0	1,500	1,000	900	3,600	2,050	200
Canvasback	4,300	2,400	300	1,000	6,500	200	3,000	500	900
Redhead	0	0	0	0	0	0	100	25	0
Ruddy duck	0	0	0	0	0	0	400	1,100	525
Common goldeneye	250	2,550	350	100	50	0	50	120	2,600
Bufflehead	0	0	0	0	0	0	0	155	0
All diving ducks	11,450	3,100	500	1,700	8,000	1,500	10,500	3,400	3,220
<b>Mergansers</b>									
Common merganser	50	875	800	4,500	500	900	200	2,300	900
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	10	25
All mergansers	50	875	800	4,500	500	900	200	2,300	920
<b>All ducks</b>	<b>22,100</b>	<b>3,625</b>	<b>2,400</b>	<b>25,950</b>	<b>72,400</b>	<b>3,300</b>	<b>11,350</b>	<b>19,440</b>	<b>62,740</b>
<b>Geese</b>									
Canada goose	55	525	25	9,200	20,000	325	125	1,645	860
Lesser snow goose	0	0	25	0	500	0	510	0	400
<b>American coot</b>	<b>4,800</b>	<b>250</b>	<b>350</b>	<b>5,500</b>	<b>0</b>	<b>400</b>	<b>650</b>	<b>1,700</b>	<b>6,600</b>
<b>Bald eagles</b>									
Adult	10	9	20	19	8	25	18	70	35
Immature	6	5	10	20	4	23	8	27	34
All eagles	16	14	24	39	12	48	26	97	69
<b>Double-crested cormorant</b>	<b>125</b>	<b>150</b>	<b>545</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>35</b>	<b>785</b>	<b>1,020</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>60</b>	<b>5</b>	<b>275</b>	<b>50</b>

Table 14. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Lake Chautauqua EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	650	50	150	5,200	2,000	900	900	350	200
American black duck	10	0	0	200	0	0	10	40	0
Northern pintail	0	0	0	2,700	0	0	20	0	0
Blue-winged teal	0	0	0	500	200	0	0	0	400
Green-winged teal	0	0	0	5,000	800	0	30	200	200
American wigeon	0	0	25	1,600	0	0	0	0	0
Gadwall	0	0	0	4,000	0	0	0	20	0
Northern shoveler	70	0	0	5,000	50	0	50	1,620	3,200
All dabbling ducks	650	50	150	15,700	2,000	900	1,010	1,620	3,225
<b>Diving ducks</b>									
Lesser and greater scaup	3,000	150	0	100	0	50	300	900	2,500
Ring-necked duck	500	225	5	0	0	0	100	150	200
Canvasback	500	200	0	0	0	30	0	0	200
Redhead	0	0	0	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0	0	800	420
Common goldeneye	200	2,550	100	0	50	0	10	0	1,700
Bufflehead	0	0	0	0	0	0	0	155	0
All diving ducks	4,000	2,775	100	100	50	80	400	1,400	3,225
<b>Mergansers</b>									
Common merganser	50	800	600	25	0	900	0	200	600
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	25
All mergansers	50	800	600	25	0	900	0	200	620
<b>All ducks</b>	<b>4,450</b>	<b>3,625</b>	<b>750</b>	<b>15,700</b>	<b>2,000</b>	<b>1,800</b>	<b>1,020</b>	<b>1,990</b>	<b>6,100</b>
<b>Geese</b>									
Canada goose	25	500	0	5,800	10	125	115	1,645	110
Lesser snow goose	0	0	0	0	0	0	0	0	0
<b>American coot</b>	<b>1,000</b>	<b>250</b>	<b>25</b>	<b>1,000</b>	<b>0</b>	<b>100</b>	<b>120</b>	<b>600</b>	<b>3,500</b>
<b>Bald eagles</b>									
Adult	7	5	11	6	4	11	9	5	10
Immature	6	3	9	7	3	14	3	3	10
All eagles	13	8	14	13	5	25	10	7	20
<b>Double-crested cormorant</b>	<b>30</b>	<b>40</b>	<b>200</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>750</b>	<b>900</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>60</b>	<b>0</b>

Table 15. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Lower Lake Chautauqua EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	10,000	700	1,400	7,400	50,000	400	1,650	14,650	49,500
American black duck	25	0	0	200	100	0	30	800	500
Northern pintail	20	0	0	1,100	10,000	0	150	1,500	6,600
Blue-winged teal	350	0	0	800	1,700	0	0	0	500
Green-winged teal	125	0	0	900	8,000	0	100	200	8,000
American wigeon	300	50	0	1,800	0	0	50	0	200
Gadwall	0	30	0	1,000	250	0	50	100	660
Northern shoveler	300	0	0	1,700	1,000	0	30	1,620	3,300
All dabbling ducks	10,200	750	1,400	9,600	61,900	400	1,790	16,040	62,370
<b>Diving ducks</b>									
Lesser and greater scaup	4,000	200	200	600	3,000	1,100	5,500	1,500	320
Ring-necked duck	1,900	500	0	1,500	1,000	900	3,500	2,050	50
Canvasback	4,000	2,400	300	1,000	6,500	200	3,000	500	700
Redhead	0	0	0	0	0	0	100	25	0
Ruddy duck	0	0	0	0	0	0	400	1,100	320
Common goldeneye	50	200	250	100	0	0	50	120	900
Bufflehead	0	0	0	0	0	0	0	155	0
All diving ducks	9,900	3,100	500	1,600	8,000	1,500	10,500	3,400	1,370
<b>Mergansers</b>									
Common merganser	0	750	700	4,500	500	490	200	2,300	300
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	10	0
All mergansers	0	750	700	4,500	500	490	200	2,300	300
<b>All ducks</b>	<b>17,650</b>	<b>3,400</b>	<b>2,400</b>	<b>12,300</b>	<b>70,400</b>	<b>1,500</b>	<b>11,350</b>	<b>19,440</b>	<b>62,700</b>
<b>Geese</b>									
Canada goose	30	25	25	3,400	20,000	200	50	1,645	750
Lesser snow goose	0	0	25	0	500	0	510	0	400
<b>American coot</b>	<b>3,800</b>	<b>0</b>	<b>325</b>	<b>4,500</b>	<b>0</b>	<b>300</b>	<b>530</b>	<b>1,700</b>	<b>6,100</b>
<b>Bald eagles</b>									
Adult	3	4	9	19	4	14	9	70	25
Immature	1	2	4	18	3	9	7	27	24
All eagles	4	6	10	37	7	23	16	97	49
<b>Double-crested cormorant</b>	<b>105</b>	<b>150</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>25</b>	<b>785</b>	<b>320</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>60</b>	<b>0</b>	<b>275</b>	<b>50</b>

Table 14. Peak numbers of waterbirds aerially inventoried by the Illinois Natural History Survey at the Upper Lake Chautauqua EMP site during spring, 1992-2000.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Dabbling ducks</b>									
Mallard	650	50	150	5,200	2,000	900	900	350	200
American black duck	10	0	0	200	0	0	10	40	0
Northern pintail	0	0	0	2,700	0	0	20	0	0
Blue-winged teal	0	0	0	500	200	0	0	0	400
Green-winged teal	0	0	0	5,000	800	0	30	200	200
American wigeon	0	0	25	1,600	0	0	0	0	0
Gadwall	0	0	0	4,000	0	0	0	20	0
Northern shoveler	70	0	0	5,000	50	0	50	1,620	3,200
All dabbling ducks	650	50	150	15,700	2,000	900	1,010	1,620	3,225
<b>Diving ducks</b>									
Lesser and greater scaup	3,000	150	0	100	0	50	300	900	2,500
Ring-necked duck	500	225	5	0	0	0	100	150	200
Canvasback	500	200	0	0	0	30	0	0	200
Redhead	0	0	0	0	0	0	0	0	0
Ruddy duck	0	0	0	0	0	0	0	800	420
Common goldeneye	200	2,550	100	0	50	0	10	0	1,700
Bufflehead	0	0	0	0	0	0	0	155	0
All diving ducks	4,000	2,775	100	100	50	80	400	1,400	3,225
<b>Mergansers</b>									
Common merganser	50	800	600	25	0	900	0	200	600
Red-breasted merganser	0	0	0	0	0	0	0	0	0
Hooded merganser	0	0	0	0	0	0	0	0	25
All mergansers	50	800	600	25	0	900	0	200	620
<b>All ducks</b>	<b>4,450</b>	<b>3,625</b>	<b>750</b>	<b>15,700</b>	<b>2,000</b>	<b>1,800</b>	<b>1,020</b>	<b>1,990</b>	<b>6,100</b>
<b>Geese</b>									
Canada goose	25	500	0	5,800	10	125	115	1,645	110
Lesser snow goose	0	0	0	0	0	0	0	0	0
<b>American coot</b>	<b>1,000</b>	<b>250</b>	<b>25</b>	<b>1,000</b>	<b>0</b>	<b>100</b>	<b>120</b>	<b>600</b>	<b>3,500</b>
<b>Bald eagles</b>									
Adult	7	5	11	6	4	11	9	5	10
Immature	6	3	9	7	3	14	3	3	10
All eagles	13	8	14	13	5	25	10	7	20
<b>Double-crested cormorant</b>	<b>30</b>	<b>40</b>	<b>200</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>750</b>	<b>900</b>
<b>White pelican</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>60</b>	<b>0</b>



Table 17. Waterbird aerial inventory data for each individual flight for the Lake Chautauqua EMP site, spring 2000.

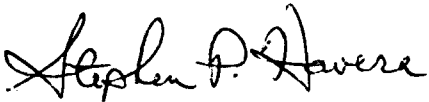
	MALLARD	BLK	PNT	BWT	GWT	WIG	GAD	SH	SCAUP	RN	CNVB	RH	RDY	GLD	BH	CM	RBM	HM	DABBLERS	TOTAL				BALD EAGLES									
																				TOTAL	TOTAL	TOTAL	DUCKS	CG	SG	COOT	AD	IMM	TOT	CORM	PEL		
Upper Lake Chautauqua																																	
02/07/00	200	0	0	0	0	0	0	0	0	0	0	0	0	1,700	0	600	0	20	200	1,700	620	2,520	0	0	0	10	10	20	0	0			
02/28/00	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	40	110	0	0	0	4	4	0	0			
03/06/00	0	0	0	0	0	0	0	0	500	0	200	0	50	0	0	0	0	0	0	750	0	750	20	0	0	0	0	0	0	5	0		
03/13/00	0	0	0	0	0	0	0	300	0	200	0	0	150	0	0	10	0	0	300	350	10	660	0	0	0	1	0	1	25	0	0		
03/23/00	0	0	0	0	0	0	0	20	0	0	0	0	30	0	0	5	0	25	20	30	30	80	0	0	25	2	0	2	110	0	0		
03/29/00	25	0	0	0	0	0	0	3,200	2,500	0	25	0	350	0	0	0	0	0	3,225	2,875	0	6,100	5	0	75	1	0	1	900	0	0		
04/06/00	50	0	0	400	200	0	0	50	0	0	0	0	420	0	0	0	0	0	700	420	0	1,120	15	0	3,500	1	0	1	700	0	0		
Lower Lake Chautauqua																																	
02/07/00	0	0	0	0	0	0	0	0	0	0	0	0	0	900	0	300	0	0	0	900	300	1,200	0	0	0	25	24	49	0	0			
02/28/00	49,500	330	6,600	0	1,980	0	660	3,300	0	0	330	0	0	0	0	0	0	0	62,370	330	0	62,700	750	400	100	4	6	10	0	50	0	0	
03/06/00	18,000	500	200	25	8,000	100	100	50	300	50	700	0	320	0	0	10	0	0	26,975	1,370	10	28,355	40	0	0	1	0	1	0	20	0	0	
03/13/00	20,000	400	400	0	5,000	200	150	2,000	320	0	0	0	0	0	0	0	0	0	28,150	320	0	28,470	50	0	0	2	1	3	0	0	0	0	
03/23/00	2,200	0	0	100	1,900	0	50	2,700	0	0	0	0	50	0	0	0	0	0	6,950	50	0	7,000	10	0	3,600	0	0	0	0	0	0	0	
03/29/00	325	5	0	500	2,100	0	25	2,400	150	0	20	0	175	0	0	0	0	0	5,355	345	0	5,700	20	0	6,100	0	0	0	0	25	0	0	
04/06/00	150	0	0	200	800	10	70	750	100	20	0	0	25	0	0	0	0	0	1,980	145	0	2,125	25	0	3,100	0	0	0	0	320	0	0	
Lake Chautauqua Total																																	
02/07/00	200	0	0	0	0	0	0	0	0	0	0	0	0	2,600	0	900	0	20	200	2,600	920	3,720	0	0	0	35	34	69	0	0	0	0	
02/28/00	49,540	330	6,600	0	1,980	0	660	3,300	0	0	330	0	0	0	0	0	0	0	62,410	330	0	62,740	860	400	100	4	10	14	0	50	0	0	
03/06/00	18,000	500	200	25	8,000	100	100	50	800	50	900	0	370	0	0	10	0	0	26,975	2,120	10	29,105	60	0	0	1	0	1	0	5	20	0	0
03/13/00	20,000	400	400	0	5,000	200	150	2,300	320	200	0	0	150	0	0	10	0	0	28,450	670	10	29,130	50	0	0	3	1	4	25	0	0	0	
03/23/00	2,200	0	0	100	1,900	0	50	2,720	0	0	0	0	80	0	0	5	0	25	6,970	80	30	7,080	10	0	3,625	2	0	2	110	0	0	0	
03/29/00	350	5	0	500	2,100	0	25	5,600	2,650	0	45	0	525	0	0	0	0	0	8,580	3,220	0	11,800	25	0	6,175	1	0	1	925	0	0	0	
04/06/00	200	0	0	600	1,000	10	70	800	100	20	0	0	445	0	0	0	0	0	2,680	565	0	3,245	40	0	6,600	1	0	1	1,020	0	0	0	

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SUBMITTED BY:

A handwritten signature in black ink, reading "Stephen P. Havera". The signature is fluid and cursive, with the first name "Stephen" being the most prominent part.

Stephen P. Havera  
Senior Professional Scientist  
Illinois Natural History Survey

DATE: 23 August 2000

